EPA/ROD/R04-97/063
1997

# EPA Superfund
# Record of Decision:

**MARINE CORPS LOGISTICS BASE**
**EPA ID: GA7170023694**
**OU 03**
**ALBANY, GA**
**09/02/1997**

<IMG SRC 970630>
<IMG SRC 97063A>

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

4WD-FFB

Commanding General
Marine Corps Logistics Base-Albany
Albany, Georgia 31704-1128

SUBJ: Record of Decision
Operable Unit 3, PSC 16 and PSC 17
MCLB-Albany NPL Site
EPA ID# GA7170023694
Albany, GA 31704

Dear Sir:

The U.S. Environmental Protection Agency (EPA) Region 4 has reviewed the above subject decision document and concurs with the remedy of Institutional Controls at PSC 16 and No Further Response Action Planned at PSC 17 at Operable Unit 3. This remedy is supported by the previously completed Remedial Investigation, Feasibility Study and Risk Assessment Reports, as well as the earlier action taken under an Interim Record of Decision. The remedy of Institutional Controls and No Further Response Action Planned is protective of human health and the environment.

As specified in the institutional Control Plan, PSC 16 will be inspected on an annual basis by the MCLB, Albany Environmental staff. It is EPA's expectation that this will be done to ensure that the institutional controls are in place and being adhered to by the base. As described in the Institutional Control Plan for PSC 16, any proposed changes in use of the site "are subject to approval by USEPA Region IV and GEPD." EPA will review the need for future remediation, monitoring, or changes in institutional controls under all applicable statutes, if any changes in use are proposed. In addition, it is imperative that the current excellent coordination between the MCLB, Environmental personnel and the MCLB Construction personnel continue and that all proposed projects and that all proposed projects that could impact the area encompassed by PSC 16 be reviewed by the MCLB Environmental office. These measures will result in the elimination of any inadvertent noncompliance with the institutional control requirements.
<IMG SRC 97063B>

EPA appreciates the coordination efforts of MCLB Albany and the level of effort that was put forth in the documents leading to this decision. EPA looks forward to continuing the exemplary working relationship with MCLB Albany and Southern Division Naval Facilities Engineering Command as we move toward final cleanup of the NPL site.

Sincerely,

Richard Green
Acting Director
Waste Management Division

cc: Sid Allison, SOUTHDIV
Lt. Frantz, MCLB-Albany
Jerry Wallmeyer, REC (NASJAX)
Joel Sanders, SOUTHDIV
Madeleine Kellam, GAEPD
Kelley Dreyer, USMC

bcc: Scott Gordon, EAD
Allison Abernathy, FFRRO/OSWE
David Levenstein, FFEO/OECA

<IMG SRC 97063C>
<IMG SRC 97063D>

5090.14.7.2
F&S2
August 15, 1997

CERTIFIED MAIL

Mr. Robert Pope
U.S. Environmental Protection Agency
Region IV, 4WD-FFB
100 Alabama Street, S.W.
Atlanta, Georgia 30303

RE: FINAL SIGNED RECORD OF DECISION FOR OPERABLE UNIT 3
(OU 3), MARINE CORPS LOGISTICS BASE, ALBANY

Dear Mr. Pope:

Enclosed are three (3) copies of the Final Signed OU 3 Record of Decision.

If you require further assistance, please contact LT Alan Frantz, Installation Restoration Program Manager, at (912)439-5637/6261.

<IMG SRC 97063E>

Encl:
(1) Final Signed OU 3 Record of Decision (three copies)

Copy to:
SOUTHNAVFACENGCOM - (Code 1861)
ABB Environmental Services, Inc.-(Ms. Miriam Sellers)

<IMG SRC 97063F>

# RECORD OF DECISION
# OPERABLE UNIT 3

## MARINE CORPS LOGISTICS BASE
## ALBANY, GEORGIA

Unit Identification Code: M67004

Contract No.: N62467-89-D-0317/079

Prepared by:

ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301

Prepared by:

Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418

Joel Sanders, Code 1868, Remedial Project Manager

August 1997

<IMG SRC 97063G>

CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, ABB Environmental Services, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/079 are complete and accurate and comply with all requirements of this contract.

DATE: July 25, 1997

NAME AND TITLE OF CERTIFYING OFFICIAL: Kathleen Hodak
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: David E. Heislein
Project Technical Lead

**DECLARATION FOR THE**
**FINAL INSTITUTIONAL CONTROL, PSC 16**
**AND**
**NO FURTHER RESPONSE ACTION PLANNED, PSC 17**
**RECORD OF DECISION**

**SITE NAME AND ADDRESS**

Marine Corps Logistics Base
Operable Unit 3
814 Radford Blvd
Albany, Georgia 31704-1128

**STATEMENT OF PURPOSE AND BASIS**

This Record of Decision (ROD) document presents the final response for Operable Unit (OU) 3 at the Marine Corps Logistics Base (MCLB), Albany. It was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act as amended by the Superfund Amendments and Reauthorization Act, and to the extent practicable, the National Oil and Hazardous Substances Contingency Plan (NCP). This decision is based on the site's Administratives Record, which is on file at the Environmental Branch Office, Facilities and Services Division, Building 5501, MCLB, Albany, Georgia 31704, and at the information repository in the Dougherty County Public Library, Albany, Georgia.

OU 3 consists of two potential sources of contamination (PSC), PSC 16 Building 7100 Polychlorinated Biphenyl (PCB) Area and PSC 17 Depot Maintenance Activity Chrome Area. A remedial investigation and feasibility study (RI/FS) was conducted at OU 3 from October 1991 to August 1992. A baseline risk assessment (RA) was contained within this RI/FS that examined hypothetical situations for current land use in which and older child could trespass on OU 3, and a hypothetical future land use of OU 3, which assumes residential use by adults and children, and associated exposures to utility construction workers. These hypothetical situations represent the most sensitive receptor and conservative risk estimates for OU 3. The RA evaluated both cancer and noncancer riks. According to the NCP for Superfund sites, the acceptable cancer risk range is from 1 in 10,000 (1x10 -4) to 1 in 1 million (1x10 -6) depending on site-specific conditions. Although the estimated ris of 1x10 -6 is the point of departure in determining the need for a response action, site-specific conditions at OU 3 indicate that application of the acceptable risk range is appropriate. Site-specific conditions that make application of the acceptable cancer risk range for OU 3 is the industrial site conditions and low probability of receptor contact with the contaminated soils.

The RA conducted for the subsurface soil at PSC 16 resulted in risks acceptable to USEPA for carcinogens (3x10 -5) and noncarcinogens (a hazard index [HI] less than 1). The HI for PSC 16 subsurface soils was 0.7. The contaminated surface soils at PSC 16 had been excavated to a depth of 44 inches and disposed of at a permitted landfill prior to the 1991 RI so they were not investigated as part of this OU 3 RI/FS.

The total carcinogenic risks estimated at PSC 17 for current and future exposures were within the acceptable risk range specified by U.S. Environmental Protection Agency (USEPA). The highest cancer risk for PSC 17 was 5x10 -6, for potential future residential risk. However, for future residential land use, the estimated noncancer risk of 5 exceeded the limits (HI of 1) identified by USEPA. This potential risk was primarily associated with exposure to chromium and lead found in the surface and subsurface soils. In addition, the results of the ecological RA indicated possible adverse effects associated with surface soil exposure by certain wildlife is the site was not cleaned up.

A complete explanation of the baseline RA is presented in the OU 3 RI/FS, dated July 1992. This document also includes the identification of applicable or relevant and appropriate requirements (ARARs), identification of treatment alternatives, and comparison with the nine USEPA criteria (including compliance with ARARs). The treatment alternatives for PSCs 16 and 17 included no action, limited action (fencing and security measures), capping, excavation with ex situ treatment and landfilling, and excavation and landfilling (no treatment) of soil. The ARARs and identification and/or evaluation of interim remedial alternatives for PSCs 16 and 17 are also summarized in the OU 3 Interim ROD (MCLB, 1992).

Therefore, and interim ROD was prepared and signed in August 1992 to implement remedial actions that would reduce the potential risks at PSCs 16 and 17. A design document was then issued in August 1993 that provided the necessary information for a contractor to perform the remedial actions at PSCs 16 and 17. These interim remedial actions were conducted between November 1993 and January 1994. A Remedial Action Report was prepared and approved by the USEPA Region IV and Georgia Environmental Protection Division (GEPD) in March 1997.

The interim remedial action at PSC 16 included the construction of a multilayer cap, installation of a chain-link fence and locked gate, warning signs, and installation of monitoring wells with periodic sampling and analysis of groundwater beneath the site to ensure that the remaining low levels of PCBs did not migrate into the groundwater.

The interim remedial action at PSC 17 included the excavation of contaminated soils to concentrations protective of humans and the environment. The excavated soils were transported offbase to a permitted facility for treatment and disposal. Clean backfill material was used to restore the site.

Based on the implementation of the interim remedial actions, the potential risks associated with the remainig surface ans subsurface soils at PSCs 16 and 17 are within ranges deemed acceptable by the USEPA Region IV. Under this final response, no further treatment of surface and subsurface soils is deemed necessary at PSCs 16 and 17; however, land-use restrictions will be implemented at PSC 16, in accordance with the 1992 interim ROD. No surface water or sediment was encountered at OU 3. Groundwater at Ou 3 will be evaluated under OU 6, a separate basewide grondwater OU.

Both the USEPA Region IV and GEPD concur with the selection of final institutional control for PSC 16, and a no further response action planned for PSC 17 surface and subsurface soils.

**DESCRIPTION OF THE SELECTED REMEDY**

This final response proposes that land-use restrictions be enforced at PSC 16 via MCLB, Albany's Base Master Plan document. This response also specifies that no further treatment, containment, or restricted access is deemed necessary for PSC 17. These remedial actions address the surface and subsurface soil at OU 3. No surface water or sediment was present at the two PSCs. Groundwater beneath OU 3 will be addressed under a continuing basewide investigation within OU 6, including the groundwater monitoring associated with the PSC 16 multilayer cap.

**DECLARATION STATEMENT**

This final response supports the protection of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the response action, and is cost-effective. This final response addresses both surface and subsurface soil at PSC 16 and PSC 17, whereas the groundwater will be addressed by the continuing basewide investigation within OU 6.

<IMG SRC 97063H>

**TABLE OF CONTENTS**

Record of Decision
Operable Unit 3
Marine Corps Logistics Base
Albany, Georgia

## LIST OF FIGURES



## LIST OF TABLES

## GLOSSARY

| | |
|---|---|
| ABB-ES | ABB Environmental Services, Inc. |
| ARARs | applicable or relevant and appropriate requirements |
| bls | below land surface |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CPC | chemicals of potential concern |
| DMA | Depot Maintenance Activity |
| EP | extraction procedure |
| FFA | Federal Facilities Agreement |
| FS | Feseability Study |
| GEPD | Georgia Environmental Protection Division |
| HI | hazard index |
| IAS | initial assessment study |
| ICP | institutional control plan |
| MCLB | Marine Corps Logistics Base |
| mg/kg | milligrams per kilogram |
| mg/l | milligrams per liter |
| Ig/kg | micrograms per kilogram |
| Ig/l | micrograms per liter |
| NFRAP | No Further Response Action Planned |
| NCP | National Oil and Hazardous Substances Contingency Plan |
| OU | operable unit |
| PAH | polycyclic aromatic hydrocarbons |
| PCB | polychlorinated biphenyl |
| PSC | potential source of contamination |
| RA | Risk Assessment |
| RCRA | Resource Conservation and Recovery Act |
| RFI | Resource Conservation and Recovery Act (RCA) Facility Investigation |
| RI | remedial investigation |
| RI/FS | remedial investigation and fesibility study |
| RI/RA | remedial investigation and risk assessment |
| ROD | record of decision |

GLOSSARY (Continued)

| | |
|---|---|
| SOUTHENAV-FACENGCOM | Southern Division, Naval Facilities Engineering Command |
| SVOC | semivolatile organic compounds |
| TCLP | toxicity characteristics leaching procedure |
| USEPA | U.S. Environmental Protection Agency |
| USMC | U.S. Marine Corps |
| VOC | volatile organic compound |

## 1.0 SITE NAME, LOCATION, AND DESCRIPTION

Marine Corps Logistics Base (MCLB), Albany is an active facility occupying 3,579 acres east-southeast of the city of Albany, Georgia. Land bordering MCLB, Albany to the south, east, and northeast is primarily agricultural or rural open space. Most of the land to the northwest and west of the base is residential and commercial.

Operable Unit (OU) 3, composed of potential sources of contamination (PSCs) 16 and 17, is located in the central portion of the base. Figure 1-1 identifies the location of MCLB, Albany and the approximate location of the PSCs that make up OU 3.

1.1 PSC 16. PSC 16 (Building 7100 Polychlorinated Biphenyl [PCB] Area) is the former location of an electrical transformer and supporting concrete pad. It is approximately 12 by 16 feet in size, located on the south side of Building 7100 (Figure 1-2). During an inspection conducted as part of a PCB transformer change-out program, evidence of leaking transformer oil was observed on the concrete pad beneath the transformer. Soil sampling and analysis conducted in 1990 confirmed the presence of PCBs and semivolatile organic compounds (SVOCs) in soil beneath the former transformer pad.

In 1990, prior to the remedial investigation (RI), contaminated surface soil at PSC 16 was excavated to a depth of 44 inches and disposed of offbase in a permitted landfill. The excavated area was then backfilled with clean soil. Additional sampling and analyses conducted in 1991 indicated that elevated concentrations of PCBs remained in the subsurface soil below 44 inches. The concentrations ranged from 310 milligrams per kilogram (mg/kg) at 44 to 48 inches below land surface (bls) to 24 mg/kg (9 to 10 feet bls). Based on these confirmatory sampling results, an RI was conducted to determine the extent of contamination in the subsurface soils. Subsequently, preventive measures to protect human health and the environment were implemented at PSC 16 in 1993. These measures will be discussed later in this document.

1.2 PSC 17. PSC 17 (Depot Maintenance Activity [DMA] Chrome Area) is located adjacent to the Central Repair Building (Building 2200), between a drum storage area and the Weapons Test Firing Building (Building No. 2226) (Figure 1-3). The Central Repair Building historically contained metal-planting operations. A release of chrome plating waste occurred at a spot approximately 40 feet northeast of Building No. 2226 sometime prior to October 1989. The contaminants migrated downhill and covered an area of approximately 1,150 square feet (Figure 1-3), Area A). The spill area contained no vegetation and was stained with a dried yellowish material. In 1990 and 1991, sampling and analyses indicated that the spill area was contaminated with chromium and lead. In 1992, additional soil sampling indicated chromium contamination at depths of 2 ant 7 feet below the spill location.

In addition, an isolated location fo soil containing low concentrations of polycyclic aromatic hydrocarbons (PAHs) and PCBs was also identified east of the gravel driveway to Building 2226 (see Figure 1-3, Area B). Surface and subsurface soil remedial actions were implemented at PSC 17 in 1993, which will be described later in this document.

<IMG SRC 97063I>
<IMG SRC 97063J>
<IMG SRC 97063K>

## 2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

MCLB, Albany currently serves as a U.S. military logistics center controlling the acquisition, storage, maintenance, and distribution of combat and support material for the U.S. Marine Corps (USMC). In addition, the base is used for military training and other tasks and functions as directed by the Commandant of the USMC.

MCLB, Albany has generated various types of solid and liquid wastes over the years, including hazardous wastes. The hazardous wastes include electroplating wastes containing heavy metals, organic solvents form stripping and cleaning operations, and waste fuel and oil.

Beginning in 1985, three investigations were performed to assess and characterize PSCs identified at MCLB, Albany. These investigations, the 1985 Initial Assessment Study (IAS), 1987 Confirmation Study, and 1989 Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) resulted in the placement of MCLB, Albany on the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priority List.

2.1 IAS. An IAS was conducted by Envirodyne Engineers, Inc., at MCLB, Albany in 1985 to identify and assess PSCs posing a potential threat to human health or the environment due to contamination form past hazardous materials disposal practices. Eight PSCs were identified at MCLB, Albany based on historical data, aerial photographs, field inspections, and personal interviews. All eight PSCs (PSCs 1-8) were evaluated to determine contaminant characteristics, migration pathways, and potential receptors. PSCs 16 and 17 had not yet been identified at the time of this IAS.

The primary pathways identified for possible migration of contaminants include erosion, surface water runoff, and groundwater transport. The predominant direction of regional groundwater flow is west toward the Flint River, approximately 2.7 miles form the base. Potential receptors identified include aquatic organisms in the receiving waters, predators and other animals relying on these areas for food and water, and humans using the Flint River for recreational purposes.

The IAS concluded that six of the eight PSCs (PSCs 1, 2, 3, 5, 6 and 7) warranted further investigation under the Navy Assessment and Control of Installation Pollutants program to assess long-term impacts. The primary recommendation of the study was to conduct a confirmation study to confirm or disprove the existence of the suspected contamination and to quantify the extent of any existing problems. Specifically, this Confirmation Study would determine (1) whether a threat to human health or the environment existed, (2) the extent of contamination, and (3) the potential for contaminant migration.

2.2 CONFIRMATION STUDY. A confirmation study was conducted by McClelland Engineers at the MCLB, Albany facility in 1986 at nine PSCs: the six PSCs recommended for further evaluation by the IAS and three additional PSCs identified as threats to human health or the environment (PSCs 9, 10 and 11).

As previously stated, PSCs 16 and 17 had not yet been identified. McClelland Engineers completed the Confirmation Study and submitted a final report in 1987 (McClelland, 1987). Based on the confirmatory study results, additional investigation was recommended for PSCs 1, 3, 6, 9, and 11.

2.3 RFI. Subsequent to the 1987 Confirmation Study, nine PSCs (PSCs 1, 2, 3, 5, 6, 7, 9, 10 and 11) were identified as solid waste management units by the Georgia Environmental Protection Division (GEPD) in the Part B RCRA Permit for MCLB, Albany. Terms of this permit required that an RFI be conducted at each of the PSCs to determine the nature and extent of releases and the potential pathways of contaminant migration to the environment. Applied Engineering and Science, Inc., completed the RFI and submitted a final report in 1989 (Applied Engineering and Science, Inc., 1989). Of the nine PSCs studied in the RFI, only PSCs 7 and 9 did not require further investigation. PSCs 16 and 17 were identified subsequently to this RFI and evaluated during the remedial investigation and risk assessment (RI/RA) in 1991.

2.4 RI/RA. In July 1991, the Department of the Navy, representing MCLB, Albany, entered into a Federal Facilities Agreement (FFA) with the GEPD and the U.S. Environmental Protection Agency (USEPA) Region IV. The FFA established a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the facility in accordance with the provisions of CERCLA, RCRA, the National Oil and Hazardous Substances Contingency Plan (NCP), Superfund guidance and policy, and the Georgia Hazardous Waste Management Act.

The conclusions of the three previous investigations indicated a need for additional data collection over the entire installation. Between 1987 and 1991, the total number of PSCs to be investigated at MCLB, Albany increased to 24 PSCs. Available data on the 24 PSCs were sufficient to indicate the requirement to characterize the extent of contamination, assess releases, and develop responses. As a result of more recent investigations, two additional PSCs, 25 and 26, were identified, resulting in a total of 26 PSCs. According to the FFA, 14 of the PSCs required an immeidate remedial investigation and feasibility study (RI/FS), 2 PSCs required RCRA investigations while the remaining 10 PSCs required site-screening activities. As a result, ABB Environmental Services, Inc. (ABB-ES), was contracted under the Comprehensive Long-Term Environmental Action, Navy contract to prepare and execute RI/FS workplans, site-screening workplans, and associated planning documents for PSCs at MCLB, Albany.

Under the RI/FS process, groups of PSCs are defined as OUs due to their proximity, similarity of waste, or similarity of investigative techniques or potential response actions. OU 3, consisting of PSCs 16 and 17, was developed because the proximity and contamination at two sites is limited to surface and subsurface soils. No surface water or sediment is present at these sites and groundwater is deferred to the OU 6 basewide groundwater investigation. A Final RI/FS report for OU 3 was released in July 1992 (ABB-ES, 1992e). The results of these investigations for OU 3 are presented below.

2.4.1 PSC 16, Building 7100 PCB Area PSC 16 is a former transformer and supporting concrete pad location, approximately 12 feet by 16 feet in area, adjacent to Building 7100. During an inspection conducted as part of a PCB transformer change-out program, evidence of leaking transformer oil was observed on the concrete pad beneath the transformer. Two sampling investigations were then conducted in response to this discovery. The transformer and associated concrete pad were removed and properly disposed of, and then a series of excavation and sampling events were conducted by Remtech and BCM Engineers in 1990. Based on the results of confirmatory sampling by BCM Engineers, the USEPA Region IV conducted further investigation on the PSC 16 subsurface soil in 1991.

In 1990, Remtech and BCM Engineers conducted a series of sampling and excavation programs at the prior location of the electrical transformer and concrete pad. Initial observations identified stained soil beneath the concrete surface indicating the need for soil excavation. Soil was excavated to a depth of 20 inches across the entire 12-foot by 16-foot area then disposed of offsite at a permitted facility. Confirmatory soil samples were then collected from the excavated area. Each subsequent round of soil excavation and confirmatory sampling indicated the need to excavate more soil form PSC 16. A total depth of 44 inches of soil was subsequently

removed from the area; however, BCM Engineers found that the contamination continued further into the subsurface soils. Based on these results, the USEPA Region IV initiated an RI at PSC 16 to determine the depth and extent of contamination. The results of this investigation were submitted to Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) in December 1991 (USEPA, 1991b).

Figure 2-1 is a plan view of PSC 16, indicating the locations of all soil samples collected during each phase of the PSC 16 RI. In addition, a summary table of all samples collected is included as Table 2-1. This table presents the sample identification number, depth, sample date, sample location, and rationale.

2.4.2 PSC 17, DMA Chrome Area The DMA Chrome Area is located to the rear of the Central Repair Building (Figure 2-2), between a drum storage area and the Weapons Test Firing Building (Building 2226). A spill of chrome plating waste occurred at a spot approximately 40 feet northeast of Building 2226. The material subsequently migrated downslope, affecting an area measuring approximately 110 feet long by 8 to 12 feet wide at the southeast (source) end, tapering down to 1 to 2 feet wide at the northwest (downhill) end (Figure 2-2). The spill area was mostly devoid of vegetation and contained a small quantity of dried yellowish material. Soil directly south of the chrome spill area was excavated during construction of a driveway that leads to the Weapons Test Firing Building (Building 2226). The excavated soil was placed on the sides of the driveway and regraded. The chrome spill area is directly on the north side of the driveway and was partially covered with excavated soils (presumably clean) during this activity.

**Table 2-1**
**Summary of 1990 (Remtech and BCM Engineers) and 1991 (USEPA) Soil Samples, PSC 16**

| Sample ID | Sampling Date | Depth | Laboratory Analysis PCBs | IE | Aroclor-1260 | Pest/PCBs | SVOC | VOC | Location/Rationale |
|---|---|---|---|---|---|---|---|---|---|
| S 1-2 | Pre 02/20/90 | Surface of excavation (20 inches below grade) | X | | | | | | Southeast section of area/confirm cleanup |
| S 2-2 | Pre 02/20/90 | Surface of excavation (20 inches below grade) | X | | | | | | Northeast section of area/confirm cleanup |
| S 3-2 | Pre 02/20/90 | Surface of excavation (20 inches below grade) | X | | | | | | Northwest section of area/confirm cleanup |
| S 4-2 | Pre 02/20/90 | Not Reported | X | | | | | | Southwest section of area/confirm cleanup |
| B 1-2 | Pre 02/20/90 | Not Reported | X | | | | | | Drummed soil/disposal evaluation |
| B 2-2 | Pre 02/20/90 | Not Reported | X | | | | | | Drummed soil/disposal evaluation |
| S-1 | 06/27/90 | Surface of excavation | | | X | | | | Northwest section of area/confirm cleanup |
| S-1 | 06/27/90 | 2 feet | X | | | | | | Northwest section of area/confirm cleanup |
| S-2 | 06/27/90 | Surface of excavation | | | X | | | | Northeast section of area/confirm cleanup |
| S-2 | 06/27/90 | 2 feet | X | | | | | | Northeast section fo area/confirm cleanup |
| S-3 | 06/27/90 | Surface of excavation | | | X | | | | Center of area/confirm cleanup |
| S-3 | 06/27/90 | 2 feet | X | | | | | | Center of area/confirm cleanup |
| S-4 | 06/27/90 | Surface of excavation | | | X | | | | Southwest section of area/confirm cleanup |
| S-4 | 06/27/90 | 2 feet | X | | | | | | Southwest section of area/confirm cleanup |
| S-5 | 06/27/90 | Surface of excavation | | | X | | | | Southeast section of area/confirm cleanup |
| S-5 | 06/27/90 | 2 feet | X | | | | | | Southeast section of area/confirm cleanup |
| S-6 | 06/27/90 | Not reported | | | X | | | | Center of area/confirm cleanup |
| S-7 | 06/27/90 | Not reported | | | X | | | | West central area near conduit/horizontal distribution |
| S-8 | 06/27/90 | Not reported | | | X | | | | Central area/near conduit |

See notes at end of table.

**Table 2-1 (Continued)**
**Summary of 1990 (Remtech and BCM Engineers) and 1991 (USEPA) Soil Samples, PSC 16**

| Sample ID | Sampling Date | Depth | Laboratory Analysis PCBs | IE | Aroclor-1260 | Pest/PCBs | SVOC | VOC | Location/Rationale |
|---|---|---|---|---|---|---|---|---|---|
| S-9 | 06/27/90 | Not reported | | | X | | | | East-central area/near conduit |
| S-10 | 06/27/90 | Not reported | | | X | | | | East side area/near conduit |
| 16-BG | 09/03/91 | Surface | | | | X | X | | 300 feet southwest of former transformer location/background |
| 16-1 | 09/03/91 | 3 to 4 feet | | | | X | X | | Center of former transformer location/vertical distribution |
| 16-2 | 09/03/91 | 4 to 5 feet | | | | X | X | | Center of former transformer location/vertical distribution |
| 16-3 | 09/03/91 | 5 to 6 feet | | X | | X | X | X | Center of former transformer location/vertical distribution |
| 16-4 | 09/03/91 | 6 to 7 feet | | | | X | X | | Center of former transformer location/vertical distribution |
| 16-5 | 09/03/91 | 7 to 8 feet | | | | X | X | | Center of former transformer location/vertical distribution |
| 16-6 | 09/03/91 | 9 to 10 feet | | X | | X | X | | Center of former transformer location/vertical distribution |

Notes: USEPA = U.S. Environmental Protection Agency.
PSC = potential source of contamination.
ID = identification.
PCBs = polychlorinated biphenyls.
IE = inorganic elements.
Pest/PCBs = pesticide and polychlorinated biphenyls.
SVOC = semivolatile organic compound.
VOC = volatile organic compound.
X = analysis performed.

<IMG SRC 97063M>

**Table 2-2**
**Summary of 1990 (Westinghouse), 1991 (USEPA), and 1992 (ABB-ES) Soil Samples, PSC 17**

| Sample ID | Sampling Date | Depth (feet) | Analytes | | | | | | | | | Sample Location/Rationale |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | EPTOX IE | IE | Pest/PCB | EOC | POC | Cr (6 + ) | CR (total) | Pb (total) | B/N Ext. | TCLP (Cr + Pb) | |
| 1 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 9 feet southeast of spill/ background |
| 2 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | Spill area/Contaminant concentration and distribution |
| 3 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | Spill area/Contaminant concentration and distribution |
| 4 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 8 feet north of spill/Contaminant concentration and distribution |
| 5 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 11 feet northwest of spill/ Contaminant distribution |
| 6 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 16 feet northwest of spill/ Contaminant distribution |
| 7 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 28 feet northwest of spill/ Contaminant distribution |
| 8 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 38 feet northwest of spill/ Contaminant distribution |
| 9 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 38 feet west of spill/Downslope contaminant distribution |
| 10 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 42 feet west of spill/Downslope contaminant distribution |
| 11 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 48 feet west-northwest of spill/Downslope contaminant distribution |
| 12 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 52 feet west-northwest of spill/ Downslope contaminant distribution |
| 13 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 56 feet west-northwest of spill/ Downslope contaminant distribution |

See notes at end of table.

**Table 2-2 (Continued)**
**Summary of 1990 (Westinghouse), 1991 (USEPA), and 1992 (ABB-ES) Soil Samples, PSC 17**

| Sample ID | Sampling Date | Depth (feet) | Analytes EPTOX IE | IE | Pest/PCB | EOC | POC | Cr (6 + ) | CR (total) | Pb (total) | B/N Ext. | TCLP (Cr + Pb) | Sample Location/Rationale |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 A/B | 5/18/90 | 0/2 | X | | | | | | | | | | 62 feet northwest of spill/ Downslope contaminant distribution |
| 17-1 | 9/04/91 | Surface | | X | X | X | X | | | | | | 13 feet southeast of spill/ Background |
| 17-2 | 9/04/91 | Surface | | X | | | | | | | | | 6 feet south of spill/ spill delineation |
| 17-3 A | 9/04/91 | Surface | | X | | | | | | | | | Origin of spill/Contaminant concentration |
| 17-3 B | 9/04/91 | 3 | | X | X | X | X | | | | | | Origin of spill/Vertical distribution |
| 17-3 C | 9/04/91 | 6 | | X | X | X | X | | | | | | Origin of spill/Vertical distribution |
| 17-3 D | 9/04/91 | 9 | | X | X | X | X | | | | | | Origin of spill/Vertical distribution |
| 17-4 | 9/04/91 | Surface | | X | | | | | | | | | 6 feet north of spill/ spill delineation |
| 17-5 A | 9/04/91 | Surface | | X | | | | | | | | | 12 feet northwest of spill/ Along spill path |
| 17-5 B | 9/04/91 | 3 | | X | | | | | | | | | 12 feet northwest of spill/Vertical distribution |
| 17-5 C | 9/04/91 | 6 | | X | | | | | | | | | 12 feet northwest of spill/Vertical distribution |
| 17-6 | 9/04/91 | Surface | | X | | | | | | | | | 27 feet northwest of spill/Along spill path |
| 17-7 A | 9/04/91 | Surface | | X | X | X | X | | | | | | 67 feet northwest of spill/Along spill path |
| 17-7 B | 9/04/91 | 3 | | X | X | X | X | | | | | | 67 feet northwest of spill/Vertical distribution |
| AB-17SB08-01 | 2/12/92 | | | | | | | X | X | X | | X | spill area/Contaminant distribution with depth |

See notes at end of table.

**Table 2-2 (Continued)**
**Summary of 1990 (Westinghouse), 1991 (USEPA), and 1992 (ABB-ES) Soil Samples, PSC 17**

| Sample ID | Sampling Date | Depth (feet) | EPTOX IE | IE | Pest/PCB | EOC | POC | Analytes Cr (6+) | CR (total) | Pb (total) | B/N Ext. | TCLP (Cr+PB) | Sample Location/Rationale |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AB-17SB08-01D | 2/12/92 | | | | | | | X | X | X | | X | Spill area/Contaminant distribution with depth |
| AB-17SB0-07 | 2/12/92 | | | | | | | X | X | X | | X | Spill area/Contaminant distribution with depth |
| AB-17SB09-01 | 2/12/92 | | | | | | | X | X | X | | X | 14 feet northwest of spill area/ Horizontal & vertical contaminant distribution |
| AB-17SB09-07 | 2/12/92 | | | | | | | X | X | X | | X | 14 feet northwest of spill area/ Horizontal & vertical contaminant distribution |
| AB-17SB10-01 | 2/12/92 | | | | | | | X | X | X | | X | 74 feet northwest of spill area/ Horizontal & vertical contaminant distribution |
| AB-17SB10-07 | 2/12/92 | | | | | | | X | X | X | | X | 74 feet northwest of spill area/ Horizontal & vertical contaminant distribution |
| AB-17SB11-01 | 2/12/92 | | | | X | | | X | X | X | X | X | 32 feet south of spill/Background vertical distribution |
| AB-17SB11-07 | 2/12/92 | | | | X | | | X | X | X | X | X | 32 feet south of spill/Background vertical distribution |
| AB-17SB11-07D | 2/12/92 | | | | X | | | X | X | X | X | X | 32 feet south of spill/Background vertical distribution |

Notes: USEPA = U.S. Environmental Protection Agency.
ABB-ES = ABB Environmental Services, Inc.
PSC = potential source of contamination.
ID = Identification.
EPTOX = extraction procedure toxicity for silver, barium, chromium, lead, arsenic, selenium, mercury, hexavalent chromium.
IE = Inorganic elements (24 elements).
Pest/PCB = pesticide and polychlorinated biphenyls.
EOC = extractable organic compounds.
POC = purgeable organic compounds.
Cr (6 + ) = hexavalent chromium.
Cr (total) = total chromium.
Pb (total) = total lead.
B/N Ext. = base/neutral extractable organic.
TCLP (Cr + Pb) = toxicity characteristic leaching procedure (chromium and lead).

Three investigations were conducted at PSC 17: (1) a May 1990 soil sampling and analysis performed by Westinghouse Environmental and Geotechnical Services, Inc. (Westinghouse), (2) a September 1991 RI soil sampling performed by USEPA Region IV, and (3) a February 1992 soil sampling performed by ABB-ES.

In May 1990, Westinghouse collected 28 soil samples form 14 soil borings located in and near the spill area (Table 2-2). Two samples were collected from each location, with one sample collected from the ground surface and one from a depth of 2 feet bls. These samples were analyzed by the extraction procedure (EP) toxicity method for the eight EP toxicity metals and hexavalent chromium. At the time of the sampling, regulatory criteria for the eight EP toxicity metals were in effect. These criteria, which consisted of maximum concentration values, were used to evaluate waste disposal options and to develop cleanup objectives at hazardous waste sites.

An evaluation of these results indicated that further investigation of the PSC was warranted. As a result, the USEPA's Environmental Compliance Branch performed RI sampling of the spill area in September 1991. The purpose of the sampling was to define the extent of contamination, gather sufficient data to perform a risk assessment (RA) and feasibility study (FS), and develop a proposed plan for the area. The details of the investigative approach taken during this event are presented in the USEPA Revised Study Plan for Sites 16 and 17, September, 1991 (USEPA, 1991a).

During this sampling event, a total of 13 soil samples was collected from 7 locations. One surface (upper 6 inches) soil sample was collected at an upgradient (or background) location, two surface soil samples were collected south and north of the spill area, and four locations within the spill area were selected for subsurface sampling (Figure 2-2). Depending on the location, sampling began at the surface, and deeper discrete sampling occurred at 3-, 6, and 9-foot depths (Table 2-2). Each sample was analyzed for volatile organic compounds (VOCs), SVOCs, pesticides and PCBs, and metals. The results of this sampling were presented in the previously mentioned report entitled Site Investigation Report for Operable Unit 3 (USEPA, 1991b), submitted to Naval Facilities Engineering Command by the USEPA in December 1991.

The results of the 1991 RI analysis indicated the need for limited additional sampling to provide data that would distinguish relative concentrations of trivalent chromium (less toxic, less mobile species) versus hexavalent chromium (more toxic, more water soluble species). These data were required to support fate and transport analysis and the human health and ecological risk assessments. In addition, PAHs, pesticides, and PCBs were detected in the previous background sample (17-1). Additional background samples were, therefore, collected to provide more data on the extent of contamination and to identify native soil concentrations.

In February 1992, ABB-ES collected 10 soil samples from 4 locations (Figure 2-2). Three of the locations were in the source area, and the fourth was a background sample. These sample locations are adjacent to locations of samples 17-3, 17-5, and 17-7, collected in 1991 by USEPA. Two samples were collected at each of the three locations, a shallow sample from a depth of 1 to 2 feet (below fill material from constructing a gravel driveway into Building 2226) and a deeper sample from approximately 7 feet bls.

The background sample location was on the east side of the driveway, approximately 80 feet southeast of the spill source are. Two samples were collected from this location: one shallow sample from a depth of about 1 foot and a deeper sample collected from about 7 feet bls.

All samples collected during the February 1992 sampling event were analyzed for total chromium, toxicity characteristic leaching procedure (TCLP) chromium, TCLP lead, hexavalent chromium, and lead. In addition to these analytes, the background sample was also analyzed for pesticides, PCBs, and SVOCs. All samples were collected and analyzed in accordance with USEPA Level III

Data Quality Objectives. The complete laboratory report of these analyses was presented in the 1992 RI/FS (ABB-ES, 1992e).

Because of regulatory changes, the TCLP replaced the EP toxicity method in 1991. Maximum contaminant values for 28 elements and compounds were included in the TCLP regulations. These values are also used to determine waste disposal options and to develop cleanup objectives at hazardous waste sites.

2.5 OU 3-RELATED DOCUMENTS. The following reports, available for review by the public at the Dougherty County Public Library in Albany, Georgia and at the MCLB, Albany Environmental Branch office, describe the detailed methodology and results of investigations at OU 3:

ABB Environmental Services, Inc. (ABB-ES). 1992a. Initial Evaluation of the Remedial Investigation Data for PSC 16 and PSC 17, Marine Corps Logistic Base (MCLB), Albany, Georgia. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) (January).

ABB-ES. 1992b. Sampling and Analysis Plan for OU 3, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (March).

ABB-ES. 1992c. Final Sampling Plan for Additional Sampling at PSC 17 - Depot Maintenance Activity (DMA) Chrome Area (Operable Unit 3) on MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (April).

ABB-ES. 1992d. Proposed Plan for OU 3, Inerim Remedial Action, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (July).

ABB-ES. 1992e. Remedial Investigation/Feasibility Study (RI/FS) Report for OU 3, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (July).

ABB-ES. 1993. Remedial Action for Operable Unit 3, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (August).

ABB-ES. 1997a. Remedial Action Report for Operable Unit 3, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (March).

ABB-ES. 1997b. Proposed Plan for Operable Unit 3, Final Institutional Control, PSC 16 and No Further Remedial Action Planned, PSC 17. Prepared for SOUTHNAVFACENGCOM (May).

Applied Engineering and Science, Inc. 1989. RCRA Facility Investigation Phase One Confirmation Study. MCLB, Albany, Georgia.

Crawford, V.I. 1979. Environmental Engineering Survey, MCLB, Albany, Georgia Prepared for SOUTHNAVFACENGCOM.

Envirodyne Engineers, Inc. 1985. Initial Assessment Study. MCLB, Albany, Georgia.

Marine Corps Logistics Base. 1992. Superfund Interim Record of decision for Operable Unit 3. MCLB, Albany (August).

McClelland Engineers. 1987. Final Report, Confirmation Study Verification Step, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM.

Remtech. 1990. Proposal for Additional Work at Building Site 7100 on Contract No. N62467-89-M-3290, PCB Removal. Prepared for SOUTHNAVFACENGCOM (February).

Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM). 1974. Multiple Use Natural Resources Management Plan for Marine Corps Supply Center. Albany, Georgia.

SOUTHNAVFACENGCOM. 1993. Master Plan, MCLB, Albany, Georgia (March).

U.S. Environmental Protection Agency (USEPA). 1991a. Revised Study Plan for Sites 16 and 17, MCLB, Albany. Prepared for SOUTHNAVFACENGCOM (September).

USEPA. 1991b. Site Investigation Report for Operable Unit 3, MCLB, Albany. Albany, Georgia (December).

Westinghouse environmental and Geotechnical Services, Inc. 1990. Hazardous Waste Analysis, 25mm Test Firing Range. Prepared for SOUTHNAVFACENGCOM (June).

## 3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

The Proposed Plan for OU 3, recommending final institutional control, PSC 16 and no further response action planned (NFRAP), PSC 17, was released to the public on May 5, 1997. This document was made available to the public in the Information repository located at Dougherty County Public Library and in the Administrative Record located at the Environmental Branch Office, Building 5501, MCLB, Albany, Georgia 31704-1128. The public notice of the Proposed Plan was published in the Albany Herald on May 7, 1997; the MCLB, Albany newspaper, The Emblem, on May 9, 1997; and announced on several local radio stations. The public comment period for the Proposed Plan was May 5 to June 3, 1997. A public meeting was held on May 13, 1997, at the Human Resources Office, Building 3010, MCLB, Albany. At this meeting, representatives from SOUTHNAVFACENGCOM, MCLB, Albany, USEPA Region IV, GEPD, and ABB-ES were available to discuss all aspects of OU 3 and the response action under consideration. The Community Relations Responsiveness Summary is included in Appendix of the decision document.

## 4.0 SCOPE AND ROLE OF THE FINAL RESPONSE AT OU 3

The response presented in this document is a final action for surface and subsurface soils at PSCs 16 and 17. In accordance with the 1992 interim Record of decision (ROD), groundwater monitoring will be conducted at PSC 16. This monitoring and reporting will be conducted as part of the basewide groundwater investigation, under OU 6. Land-use restrictions will also be implemented for PSC 16 through the MCLB, Albany Master Plan document. PSC 17 will not require further treatment, containment, or restricted access. There was no surface water or sediment at either PSC 16 or PSC 17. This response action was concluded in accordance with the NCP and USEPA regulatory guidance for Superfund sites.

## 5.0 SUMMARY OF SITE CHARACTERISTICS

This section summarizes the regional geology, hydrogeology, and ecology in the vicinity of MCLB, Albany. The nature and extent of contaminants is also presented for OU 3. A more detailed presentation of this information is available in the RI/FS report for OU 3 (ABB-ES, 1992e).

5.1 GEOLOGY. MCLB, Albany is located in the Coastal Plain Physiographic Province, which is made up of layers of sand, clay, sandstone, and limestone. These layers of soil and rock extend to a depth of at least 5,000 feet bls. Each layer has been identified and named by geologists according to its composition and physical properties.

The soil and rock layers at MCLB, Albany is descending order, are the clayey overburden, the Ocala Limestone, and the Lisbon Formation. The overburden layer is made up mostly of clay with some silt and sand. The Ocala Limestone is divided into an upper unit and a lower unit. The upper unit is a lime mud or chalky paste. The lower unit is hard, dense rock that has been dissolved by the movement of water along fractures to form underground caves and springs. The Lisbon Formation is a hard, clayey limestone. These are the soil and rock layers that control the movement of underground water in the first 350 feet bls at MCLB, Albany. Figures 5-1 and 5-2 present a generalized geologic section of the Albany area.

5.2 HYDROGEOLOGY. Soil and rock layers are also grouped and named according to how well water moves through them. Layers that bear water to wells are called aquifers, and layers that cannot bear water are called confining layers. The clayey overburden and the upper unit of the Ocala Limestone are considered together to be a confining layer. The lower unit of the Ocala Limestone is the major water-bearing zone of the Floridan aquifer. The Lisbon Formation forms a confining layer beneath the Floridan aquifer.

The Floridan aquifer is recharged by rainfall that slowly percolates down through the confining units and through sinkholes. Movement of water in the Floridan aquifer is generally westward toward the Flint River, where it discharges to the river through springs (Figure 5-3).

Most irrigation wells and household water wells near MCLB, Albany draw water from the Floridan aquifer. City water wells may also draw water from the Floridan aquifer, although most of the city water is produced from deeper aquifers.

5.3 ECOLOGY. The majority of forested land in the vicinity of the base is vegetated with longleaf pine flatwoods, the most extensive plant community in the southern coastal plain. Pine flatwoods grow in Florida, Georgia, South Carolina, and North Carolina.

The pine flatwoods habitat commonly found at MCLB, Albany supports diverse plant and animal life, including invertebrates (e.g., insects and worms), reptiles, and amphibians. A number of mammals inhabit the pine flatwoods community, although no mammal is exclusive to this habitat. Pine flatwoods also provide habitat for a variety of birds, including seed- and insect-eaters, flycatchers, and aerial predators (e.g., owls and hawks).

<IMG SRC 97063N>
<IMG SRC 97063O>
<IMG SRC 97063P>

The presence of two rare threatened species has been confirmed at the base. The American alligator (Alligator mississippiensis), now classified as threatened, has been documented in wetland habitants at the base; this semi-aquatic species is present throughout the southeast. Bachman's sparrow (Aimophila aestivalis), a State and federally liste "rare" species, is also a possible resident of the dry, open pine forests at MCLB, Albany; this large, secretive sparrow is a year-round resident of southern Georgia. The red-cockaded woodpecker (Picoides borealis), a federally listed endangered species, occurs almost exclusively within this pine flatwoods habitat; however, there are no known records for this species at MCLB, Albany.

5.4 NATURE AND EXTENT OF CONTAMINANTS. The nature, extent, and concentration of hazardous substance contamination at OU 3 was studied during the RI.

Potentially hazardous substances detected at OU 3 and the media affected are summarized in tables by PSC and media sampled and analyzed. Units are generally presented in micrograms per kilogram (Ig/kg) or mg/kg or milligrams per liter ([mg/l], EP toxicity analysis).

Concentrations of analytes detected by laboratory analyses are reported in Ig/kg or mg/kg for soil samples and mg/l for water samples. For instance, a concentration of 3,100 mg/kg for iron means that 3,100 milligrams of iron are present in each kilogram of soil. A kilogram is a unit measure of weight equal to about 2.2 pounds. One thousand micrograms equal 1 milligram, 1,000 milligrams equal 1 gram, and 1,000 grams equal 1 kilogram. A liter is a unit measure of volume roughly equal to a quart.

5.4.1 PSC 16, Building 7100 PCB Area The source of contaminants at PSC 16 appears to be from an electrical transformer historically located on the concrete pad. In early 1990, Remtech and BCM Engineers conducted soil sampling in conjunction with three excavation programs that removed a total depth of 44 inches of soil from the area.

In February 1990, Remtech collected four soil sample from the bottom of a 20-inch excavated area. Although the original laboratory data are not available, the Remtech data summary indicated that PCBs ranged from 20 to 187 mg/kg. Two composite samples collected from drummed soil and analyzed for disposal purposes was found to contain PCBs at 44 766 mg/kg.

In June 1990, BCM Engineers excavated additional soil from PSC 16 (volume unknown) and collected confirmatory soil samples from five locations (S-1 through S-5; Figure 2-1). Two samples were collected from each location: one from the newly exposed soil surface and one from a depth of 2 feet. These confirmatory sampling results identified concentrations of Aroclor-1260 in the surface samples and concentrations of "PCB/Soil" in the deeper samples. Based on these confirmatory sampling results, additional soil was excavated to a total depth of 44 inches bls, and the entire excavation area was backfilled with clean soil. Analyses of the samples collected by BCM Engineers indicated the presence of one PCB, Aroclor-1260, in soil remaining beneath the excavated area at concentrations up to 1,204 mg/kg.

In response to the detection of Aroclor-1260 in the remaining subsurface soil, the USEPA Region IV conducted an RI at PSC 16 beginning in September 1991. Seven soil samples were collected from two locations during the event. One sampling location was selected at the approximate center of the PSC and one background sample location was selected in an open field approximately 300 feet southwest of the PSC. Six samples were collected at 1-foot intervals from the center sampling location at the following depths; 3 to 4 feet (immediately beneath the clean replacement fill), 4 to 5 feet, 5 to 6 feet, 7 to 8 feet, and 9 to 10 feet. One grab surface soil sample was collected from the background location. Figure 2-1 presents the sample locations.

Samples from the center of PSC 16 were analyzed for pesticides and PCBs, VOCs, and SVOCs. Two of the six samples from the center of PSC 16 were also analyzed for inorganic elements (Table 2-1). The background sample was analyzed for pesticides, PCBs, VOCs, and SVOCs. All of the analytical results from the 1990 (Remtech and BCm Engineers) and 1991 (USEPA) sampling events for preexisting conditions (prior to the 1992 Interim ROD) are summarized in Table 5-1. The summary table includes only those analytes detected at concentrations above the laboratory quantitation limit.

5.4.2 PSC 17, DMA Chrome Area The potential source area at PSC 17 was identified by the visual staining of the surface soils, lack of green vegetation, and small pile of waste remaining on the surface. In the 1990 sampling event, 28 soil samples were collected from 14 locations (Tables 5-2 and 5-3; Figure 2-2). No designated background sample was identified for this sampling event. All samples were analyzed for the eight EP toxicity metals and hexavalent chromium. All metals except for chromium were present, if detected, at less than the maximum concentration of contaminants for toxicity characteristic (40 Code of Federal Regulations [CFR] 261.24). Chromium concentrations exceeded the EP toxicity maximum concentration in samples from two locations near the spill area (Table 5-4). At that time there was no EP toxicity maximum concentration for hexavalent chromium.

In 1991, USEPA Region IV collected 13 soil samples from 7 locations, including 1 background location (Figure 2-2). All of the samples were analyzed for 24 inorganic elements. A total of nine inorganic elements were detected in one or more samples at concentrations that exceeded either twice the PSC 17 background concentration or, for those inorganic elements which were not detected in the background sample, twice the detection limit in the background sample.

Chromium concentration exceeded twice the PSC-specific background (75 mg/kg) in nine surface samples located in and just downgradient from the source area. These sample concentrations ranged from 160 mg/kg to 49,000 mg/kg. Lead was present at concentrations exceeding the maximum PSC-specific background concentration (260 mg/kg in the two surface samples from the source area (610 mg/kg and 3,900 mg/kg).

In 1992, ABB-ES collected a total of 10 samples from three source area locations and one background location (Figure 2-2). The samples were analyzed for total chromium, hexavalaent chromium, total lead, TCLP lead, and TCLP chromium. Total chromium, hexavalent chromium, and lead were present in both the deep and shallow samples from the source sampling location at concentrations significantly (greater than two times) above the PSC-specific background concentrations (Table 5-5).

**Table 5-1**
**Summary of 1990 (Remtech/BCM Engineers) and 1991 (USEPA)**
**Subsurface Soil Data* PSC 16**

| Analyte | No. of Samples Analyte Detected in/ Total No. of Samples | Range of Detected Concentrations | Average Concentration | Site Background Concentration 1 |
|---|---|---|---|---|
| Semivolatile Organic Compounds (Ig/kg) | | | | |
| 1,2,4-Trichlorobenzene | 5/6 | 350 J to 80,000 | 17,568 | ND |
| Hexachlorobenzene | 2/6 | 600 J to 2,200 J | 950 | ND |
| Pentachlorobenzene | 6/6 | 1,000 JN to 60,000 JN | 15,500 | NA |
| 1,2,4,5 - Tetrachlorobenzene | 1/1 | 2,000 JN | 2,000 | NA |
| Tetrachlorobenzene (2 isomers) | 5/5 | 8,000 JN to 200,000 JN | 61,400 | NA |
| Trichlorobenzene (not 1,2,4-) | 5/5 | 900 JN to 40,000 JN | 10,980 | NA |
| Pesticides and PCBs (Ig/kg) | | | | |
| 4,4'-DDE | 1/7 | 19 | 19** | NA |
| 4,4'-DDT | 1/7 | 10 | 10** | NA |
| Aroclor-1260 | 6/6 | 13,000 C to 310,000 C | 121,833 | ND |
| Inorganic Analytes (mg/kg) | | | | |
| Aluminum | 2/2 | 17,000 to 25,000 | 21,000 | 12,000 |
| Barium | 2/2 | 12 to 33 | 23 | 100 |
| Calcium | 2/2 | 120 to 310 | 215 | 37,000 |
| Chromium | 2/2 | 17 to 26 | 22 | 75 |
| Copper | 2/2 | 5.9 to 7.6 | 6.8 | 60 |
| Iron | 2/2 | 15,000 to 19,000 | 17,500 | 19,000 |
| Lead | 2/2 | 7.1 to 14 | 11 | 260 |
| Magnesium | 2/2 | 150 to 350 | 250 | 6,000 |
| Manganese | 2/2 | 30 to 130 | 80 | 440 |
| Mercury | 2/2 | 0.11 to 0.12 | 0.12 | ND |

See notes at end of table.

**Table 5-1 (Continued)**
**Summary of 1990 (Remtech/BCM Engineers) and 1991 (USEPA)**
**Subsurface Soil Data* PSC 16**

| Analyte | No. of Samples Analyte Detected in/ Total No. of Samples | Range of Detected Concentrations | Average Concentration | Site Background Concentration 1 |
|---|---|---|---|---|
| Inorganic Analytes (mg/kg) (Continued) | | | | |
| Nickel | 2/2 | 4.7 to 9.1 | 6.9 | 18 |
| Titanium | 2/2 | 160 to 190 | 175 | 340 |
| Vanadium | 2/2 | 49 to 54 | 52 | 13 |
| Yttrium | 2/2 | 2.7 to 18 | 10 | 17 |
| Zinc | 2/2 | 6.0 to 15 | 11 | 110 |

1 Concentration in mg/kg. Background concentrations are based on PSC 17 background samples.

Notes: USEPA = U.S. Environmental Protection Agency.
* = includes only results from 1991 U.S. Environmental Protection Agency sampling.
** = maximum concentration given because average distorted by high detection limits.
PSC = potential source of contamination.
Ig/kg = micrograms per kilogram.
J = estimated value.
ND = not detected.
N = presumptive evidence of presence of material.
NA = not analyzed.
PCBs = polychlorinated biphenyls.
DDE = dichlorodiphenyldichloroethene.
DDT = dichlorodiphenyltrichloroethane.
C = confirmed by gas chromatograph and mass spectrometer.
mg/kg = milligrams per kilogram.

**Table 5-2**
**Summary of 1991 (Westinghouse and USEPA) and 1992 (ABB-ES) Surface Soil Data**
**PSC 17 (0- to 18-Inch Depth)**

| Analyte | No. of Samples Analyte Detected in/ Total No. of Samples | Range of Detected Concentrations | Average Concentration | Site Background Concentration 1 |
|---|---|---|---|---|
| Volatile Organic Compounds (Ig/kg) | | | | |
| Xylene (total) | 1/2 | 6.1 J | 6.1 J * | ND |
| Semivolatile Organic (Ig/kg) | | | | |
| Anthracene | 1/2 | 170 J | 170 * | ND |
| Benzo(a)anthracene | 1/2 | 620 J | 620 * | ND |
| Benzo(b/k)fluoranthene | 1/2 | 1,400 J | 1,050 | ND |
| Chrysene | 1/2 | 680 J | 680 * | ND |
| Fluoranthene | 1/2 | 1,900 | 1,300 | ND |
| Phenanthrene | 1/2 | 1,100 | 900 | ND |
| Pyrene | 1/2 | 1,400 | 1,050 | ND |
| Pesticides and PCBs (Ig/kg) | | | | |
| Aroclor-1260 | 1/2 | 160 J | 123 | ND |
| 4,4'-DDT | 1/2 | 21 J | 20 | ND |
| Beta - BHC | 1/2 | 2.0 J | 2.0 * | ND |
| Inorganic Analytes (mg/kg) | | | | |
| Aluminum | 6/6 | 4,900 to 16,00 | 8,000 | 12,000 |
| Arsenic | 2/6 | 1.0 to 5.4 | 5.4 * | (9.0) |
| Barium | 6/6 | 19 to 260 | 117 | 100 |
| Beryllium | 1/6 | 0.55 | 0.55* | (1.3) |
| Cadmium | 1/6 | 0.52 | 0.52* | 3.5 |
| Calcium | 5/6 | 370 to 11,000 | 3,012 | 37,000 |
| Chromium (total) | 9/9 | 5.3 J to 49,000 | 7,038 | 40 |

See notes at end of table

**Table 5-2 (Continued)**
**Summary of 1991 (Westinghouse and USEPA) and 1992 (ABB-ES) Surface Soil Data**
**PSC 17 (0- to 18-Inch Depth)**

| Analyte | No. of Samples Analyte Detected in/ Total No. of Samples | Range of Detected Concentrations | Average Concentration 1 | Site Background Concentration 2 |
|---|---|---|---|---|
| Inorganic Analytes (mg/kg) (Continued) | | | | |
| Chromium VI | 1/3 | 87.0 | 29 | (0.11) |
| Cobalt | 3/6 | 1.0 to 1.4 | 1.4* | (3.0) |
| Copper | 6/6 | 3.8 to 83 | 20.6 | 30 |
| Iron | 6/6 | 3,100 to 68,000 | 14,683 | 19,000 |
| Lead | 8/9 | 5.0 to 3,900 | 517 | 132 |
| Magnesium | 5/6 | 140 to 2,100 | 568 | 6,000 |
| Manganese | 6/6 | 120 to 260 | 182 | 440 |
| Mercury | 4/6 | 0.11 to 0.13 | 0.09 | (0.5) |
| Nickel | 3/6 | 2.2 to 3.7 | 3.7* | 18 |
| Potassium | 2/6 | 280 to 5,600 | 5,600* | (600) |
| Sodium | 1/6 | 9,900 | 1,750 | (300) |
| Strontium | 5/6 | 9.2 to 57 | 2.9 | 77 |
| Tin | 1/6 | 15 | 15* | 7.5 |
| Titanium | 6/6 | 87 to 140 | 140* | 340 |
| Vanadium | 6/6 | 9.3 to 120 | 31 | 13 |
| Yttrium | 5/6 | 5.7 to 19 | 14 | 17 |
| Zinc | 5/6 | 8.1 to 20 | 38 | 110 |

1 Nondetect were assigned one-half of Sample Quantitation Limit for calculation of average.
2 Parenthesis indicate element was not detected in background sample. Value in parenthesis is the detection limit.

Notes: USEPA = U.S. Environmental Protection Agency.
ABB-ES = ABB Environmental Services, Inc.
* = maximum concentration given because average concentration is greater than maximum.
PSC = potential source of contamination.
Ig/kg = micrograms per kilogram.
J = estimated value.
ND= not detected.
PCBs = polychlorinated biphenyls.
DDT = dichlorodiphenyltrichloroethane.
BHC = benzene hexachloride.
mg/kg = milligrams per kilogram.

**Table 5-3**
**Summary of 1991 (Westinghouse and USEPA) and 1992 (ABB-ES) Subsurface Soil Data**
**PSC 17 (Soils Depths 3 to 9 Feet)**

| Analyte | No. of Samples Analyte Detected in/ Total No. of Samples | Range of Detected Concentrations | Average Concentration 1 | Site Background Concentration 2 |
|---|---|---|---|---|
| Inorganic Analytes (mg/kg) | | | | |
| Aluminum | 6/6 | 18,000 to 35,000 | 23,833 | 12,000 |
| Arsenic | 1/6 | 2.9 | 2.9* | (9.0) |
| Barium | 6/6 | 8.7 to 34 | 20 | 100 |
| Cadmium | 1/6 | 7.9 | 1.9 | 3.5 |
| Calcium | 5/6 | 170 to 440 | 249 | 37,000 |
| Chromium (total) | 9/9 | 13.4 to 1,000 | 248 | 18.6 |
| Chromium VI | 1/3 | 249 | 83 | (0.11) |
| Copper | 6/6 | 4.9 to 9.6 | 6.6 | 60 |
| Iron | 6/6 | 8,100 to 20,000 | 13,350 | 19,000 |
| Lead | 8/9 | 4.1 to 38 | 14 | 132 |
| Magnesium | 6/6 | 190 to 340 | 255 | 6,000 |
| Manganese | 6/6 | 11 to 36 | 21 | 440 |
| Mercury | 3/6 | 0.11 to 0.13 | 0.07 | (0.5) |
| Nickel | 6/6 | 5.2 to 50 | 13.8 | 18 |
| Potassium | 1/6 | 1,400 | 450 | (600) |
| Strontium | 5/6 | 3.2 to 21 | 7.1 | 77 |
| Titanium | 6/6 | 150 to 210 | 168 | 340 |
| Vanadium | 6/6 | 32 to 60 | 44 | 13 |
| Yttrium | 5/6 | 4.0 to 16 | 7.7 | 17 |
| Zinc | 6/6 | 5.9 to 51 | 15 | 110 |

1 Nondetects were assigned one-half of Sample Quantitation Limit for calculation of average.
2 Parenthesis indicate element was not detedted in background sample. Value in parenthesis are detection limits.

Notes: USEPA = U.S. Environmental Protection Agency.
ABB-ES = ABB Environmental Services, Inc.
* = maximum concentration given because average concentration is greater than maximum.
PSC = potential source of contamination.
mg/kg = milligrams per kilogram

**Table 5-4**
**Summary of Soil Sample Analytical Results**
**1990 (Westinghouse) Extraction Procedure Toxicity Analysis**
**PSC 17**

| Type of Analysis | No. of Samples Analyte Detected in/ Total No. of Samples | Range of Detected Concentrations | Average Concentration | Maximum Toxicity Characteristics (mg/l) 2 |
|---|---|---|---|---|
| Cap Analysis | | | | |
| Silver | 10/28 | 0.007 to 0.030 | 0.014 | 5.0 |
| Barium | 28/28 | 0.011 to 1.02 | 0.258 | 100.0 |
| Cadmium | 19/28 | 0.006 to 0.116 | 0.045 | 1.0 |
| Chromium | 28/28 | 0.010 to 185 | 8.968 | 5.0 |
| Lead | 18/28 | 0.026 to 0.549 | 0.203 | 5.0 |
| AAH Analysis | | | | |
| Arsenic | 6/28 | 0.0007 to 0.0016 | 0.001 | 5.0 |
| Selenium | 12/28 | 0.0004 to 0.0031 | 0.003 | 1.0 |
| AACV Analysis | | | | |
| Mercury | 0/28 | 0 | 0 | 0.2 |
| Colorimetric Analysis | | | | |
| Hexavalent Chromium | 12/28 | 0.03 to 8.05 | 6.49 1 | N/A |

1 Data for hexavalent chromium may be either mg/l or milligrams per hectogram and is included for reference purposes only.
2 From 40 Code of Federal Regulations 261.24, June 1990.

Notes: PSC = Potential Source of Contamination.
mg/l = milligrams per liter.
AAH = graphite furnace atomic adsorption.
AACV = atomic adsorption cold vapor extraction.
N/A = not analyzed.

**Table 5-5**
**1992 (ABB-ES) Soil Samples, Inorganics**
**PSC 17**

| Sample No. | Chromium (mg/kg) | Hexavalent Chromium (mg/kg) | TCLP Chromium (mg/l) | Lead (mg/kg) | TCLP Lead (mg/l) |
|---|---|---|---|---|---|
| SB-08-01 | 3,570 | 81.7 | 10.1 | 7.6 | <0.03 |
| SB-08-01D | 3,020 | 92.2 | 8.8 | 56.2 | <0.30 |
| SB-08-07 | 441 | 249 | 8.3 | 11.9 | <0.038 |
| SB-09-01 | 10.5 | <0.12 | <0.01 | 5.2 | <0.032 |
| SB-09-07 | 13.5 | <0.11 | <0.01 | 5.2 | <0.030 |
| SB-10-01 | 5.3 | <0.12 | <0.01 | 5.1 | <0.030 |
| SB-10-07 | 13.5 | NA | <0.01 | 5.6 | <0.030 |
| SB-11-01 | 4.3 | <0.11 | <0.01 | 4.2 | <0.03 |
| SB-11-07 | 24 | <0.18 | <0.01 | 5.5 | <0.03 |
| SB-11-07D | 13.4 | <0.13 | <0.01 | 4.1 | <0.03 |
| Maximum Toxicity Characteristic Concentrations (mg/l) | NA | NA | 5.0 | NA | 5.0 |

Notes: ABB-ES = ABB Environmental Services, Inc.
PSC = potential source of contamination.
mg/kg = milligrams per kilogram.
TCLP = toxicity characteristics leaching procedure.
mg/l = milligrams per liter.
NA = not analyzed.
< = less than.

The average surface soil background value for tatal chromium (40 mg/kg: includes 1991 and 1992 data) at PSC 17 was exceeded in one shallow source area sample. The average subsurface soil background value for total chromium (18.6 mg/kg: 1992 data) was exceed in one deep source area sample. Hexavalent chromium was not detected in the background samples and was detected in two shallow and deep sampls from the spill source area. Lead was present at greater than two times the PSC-specific background concentration in only the deep source area sample. Chromium concentration in the TCLP extract from shallow and deep source area samples exceeded the Maximum Toxicity Characteristic Concentration of 5.0 mg/l (40 CFR 261.24). However, the concentrations of chromium in other samples and lead in all samples did not exceed their respective maximum concentration.

During the 1992 sampling, chromium and lead were not detected in the TCLP extract from the background samples. Only chromium was detected in the extract from the shallow spill area sample at 9,453 micrograms per liter (Ig/l), whereas as chromium (8,302 Ig/l) and lead (38 Ig/l) were detected in extract from the deep spill area sample.

All of the analytical results for PSC 17 are summarized in Tables 5-2 through 5-5. These summary tables include only those analytes detected at concentrations above the laboratory quantitation limit.

## 6.0 SUMMARY OF SITE RISKS AND INTERIM REMEDIAL ACTIONS

The OU 3 RI analytical data were evaluated to determine whether the individual compounds were site related (i.e., resulting from historical waste disposal practices) or associated with base background data. Based on this evaluation, a list of chemicals of potential concern (CPCs) were developed for each medium investigated at OU 3. Tables 6-1 and 6-2 present the CPCs for each PSC and medium. These CPCs were then evaluated within the baseline RA.

6.1 OU 3 BASELINE RA. An RA was prepared for pre-cleanup (or preexisting) conditions at OU 3 in accordance with USEPA Risk Assessment Guidance. This guidance reflects a conservative approach to risk assessment to ensure that subsequent cleanup decisions are protective of human health and the environment. The RA estimates or characterizes the potential present and future risks to human health and the environment. Three factors were considered when evaluating the risks associated with exposure to surface and subsurface soils at OU 3.

- The extent of contamination present at the site and surrounding areas.
- The pathways through which people and the environment are or may potentially be exposed to contaminants at the site.
- The potential toxic effects of site contaminants on humans and the environment.

6.1.1 PSC 16, Building 7100 PCB Area Human health and environmental risks associated with the exposure to subsurface soils were evaluated in the RA at PSC 16. As indicated before, contaminated surface soils (to a depth of 44 inches) were removed in a prior cleanup action and replaced with clean soil. No surface water or sediment was present at PSC 16. PSC 16 is also surrounded by paved areas and an adjacent building; therefore, an ecological RA was not required since ecological receptors could not access the contaminate subsurface soil.

The CPSs for subsurface soil at PSC 16 (Table 6-1) were evaluated as part of the RA. Potential exposure to these CPCs could only occur as the result of soil excavation operations. Construction workers and future residents (adult and child) could be exposed to contaminants for a limited time period through accidental ingestion of, and/or skin contact with subsurface soils in an open excavation.

**Table 6-1**
**Chemicals of Potential Concern at PSC 16**

| Chemicals | Human Health | | Ecological |
|---|---|---|---|
| | Surface Soil 1 | Subsurface Soil | Subsurface Soil 1 |
| Semivolatile Organic Compounds | | | |
| 1,2,4-Trichlorobenzene | | X | |
| Hexachlorobenzene | | X | |
| Pentachlorobenzene | | X | |
| 1,2,3,5-Tetrachlorobenzene | | X | |
| Tetrachlorobenzene (2 isomers) | | X | |
| Trichlorobenzene (Except 1,2,4-) | | X | |
| PCBs | | | |
| Aroclor-1260 | | | |

1 No exposure pathways were evaluated for human health and ecological receptor exposure to surface soils because the
top 44 inches of soil was excavated and backfilled with clean soil.

Notes: PSC = potential source of contamination.
PCBs = polychlorinated biphenyls.

**Table 6-2**
**Chemicals of Potential Concern at PSC 17**
**Preexisting Conditions**

| Chemicals | Human Health | | | Ecological |
|---|---|---|---|---|
| | Surface Soil | Subsurface Soil | Dust Inhalation | Subsurface Soil |
| Volatile and Semivolatile Organic Compounds | | | | |
| Benzo(a)anthracene | X | | X | X |
| Benzo(b) and/or fluoranthene | X | | X | X |
| Chrysene | X | | X | X |
| Pyrene | X | | X | X |
| Xylene | | | | X |
| Anthracene | | | | X |
| Fluoranthene | | | | X |
| Phenanthrene | | | | X |
| Pesticides and PCBs | | | | |
| Aroclor-1260 | X | | X | X |
| Inorganic Analytes | | | | |
| Chromium (trivalent) | X | X | X | X |
| Chromium (hexavalent) | X | X | X | X |
| Lead | X | X | X | X |

Notes: PSC = potential source of contamination.
PCBs = polychlorinated biphenyls.

The RA evaluated both cancer and noncancer risks. According to the NCP for Superfund sites, the estimated risk of 1x10 -6 is the point of departure in determining the need for a response action. However, depending on site-specific conditions, the acceptable cancer risk range of 1 in 10,000 (1x10 -4) to 1 in 1 million (1x10 -6) may be used. The industrial site conditions and low probability of receptor contact with the contaminated soil at OU 3 support the use of this risk range. The RA conducted for the subsurface soil at PSC 16 resulted in an estimated carcinogenic risk of 3x10 -5 and a noncarcinogenic risk (hazard index [HI]) of 0.7.

6.1.2 PSC 17, DMA Chrome Area Human health and ecological risks associated with exposure to the soils at PSC 17 were evaluated and compare to USEPA acceptable risk values. The CPCs identified and evaluated at PSC 17 are listed in Tabel 6-2 for both surface and subsurface soils. Exposure pathways for these CPCs on MCLB, Albany personnel working near (or walking by) were determined to be direct skin contact and the breathing of windblown particles.

Exposures associated with future residential use of the PSC included exposure to both children and adults to contaminated surface soils. The exposure pathways consisted of incidental ingestion and direct contact with soils and breathing windblown soil particles. Workers could also be exposed to subsurface soils during construction of future residential housing units at the PSC. Exposure pathways for these workers would include incidental ingestion, the breathing of windblown dust particles, and direct contact with soils for a limited period of time.

The total carcinogenic risks estimated at PSC 17 for current and future exposures were within the acceptable risk range specified by USEPA. The highest cancer risk for PSC 17 was 5x10 -6, for potential future residential risk. However, for future residential land use, the estimated noncancer risk of 5 exceeded the limits (HI of 1) identified by USEPA. This potential risk was primarily associated with exposure to chromium and lead found in the surface and subsurface soils. In addtion, the results of the ecological RA indicated possible adverse effects associated with surface soil exposure by certain wildlife if the site were not cleaned up.

For complete explanation of the baseline RA results for OU 3, please refer to the RI/FS document (ABB-ES, 1992e), located at the MCLB, Albany Environmental Office and the Dougherty County Library.

6.2 COMPLETED INTERIM REMEDIAL ACTIONS AT OU 3. The OU 3 RI/FS (ABB-ES, 1992e) included the RA, identification of applicable or relevant and appropriate requirements (ARARs), identification of treatment alternatives, and comparison with the nine USEPA criteria (including compliance with ARARs). The treatment alternatives for PSCs 16 and 17 included no action, limited action (fencing and security measures), capping, excavation with ex situ treatment and landfilling, and excavation and landfilling (no treatment) of soil. The ARARs and identification and/or evaluation of interim remedial alternatives for PSCs 16 and 17 are also summarized in the OU 3 Interim ROD (MCLB, 1992). Based on their review of the OU 3 RI/FS (which included the RA), the USEPA Region IV and GEPD in 1992 approved the interim remedial actions proposed by SOUTHNAVFACENGCOM and MCLB, Albany for OU 3. The interim remedial action for OU 3, in accordance with the signed interim ROD, included construction of a multilayer cap at PSC 16 and the excavation and off-base stabilization/disposal of contaminated soils from PSC 17. Remedial activities began in November 1993, and construction was completed in January 1994.

6.2.1 PSC 16, Building 7100 PCB Area The interim remedial action at PSC 16 included

- installation of a multilayer cap over the surface area,
- reinstallation and maintenance of security fencing,
- excavation and offbase disposal of sediment in the bottom on the catch basin adjacent to PSC 16, and
- installation of monitoring wells and monitoring of groundwater quality.

The multilayer cap at PSC 16 (Figure 6-1) provides a barrier that prevents human exposure to hazardous materials. The cap also reduces the chance of rainwater inducing contaminant migration into groundwater by directing the majority of surface water away from the site. the multilayer cap is now permanent.

During construction, debris in the area that was contaminated with PCBs greater than 10 micrograms per 100 square centimeters was also disposed of in a permitted, hazardous waste landfill.

In addition, five monitoring wells were installed around PSC 16 to periodically monitor groundwater quality to ensure none of the contaminants move without being detected. Groundwater was collected from the monitoring wells at PSC 16 twice during 1996 for laboratory analysis. The analysis indicated that no groundwater contamination occurred from transformer oils. Future groundwater monitoring at PSC 16 will be conducted as part of OU 6 (an ongoing basewide groundwater investigation).

Institutional Control Plan (ICP). An ICP was prepared by SOUTHNAVFACENGCOM and MCLB, Albany to ensure future protection of the cap constructed at PSC 16 (Appendix B). The ICP restricts construction and storage activities at PSC 16 and limits physical access to the property.

Should the decision later be made to transfer ownership of the property encompassing PSC 16 to any private person or entity, then the Navy shall either (1) take all actions necessary to remediate the site to then existing residential cleanup standards prior to effecting such transfer, or (2) deed record with the Dougherty County Register of Deeds appropriate restrictive covenants prohibiting future residential usage of the property or disturbance of the site's surface cap through routine excavation or building/utility construction, maintenance, or repair activities on or immediately adjacent to the site. Should the Navy not have the requisite legal authority to record such deed restrictions, then it shall take all steps necessary to ensure that the cognizant federal agency with such authority does so unless the property is remediated to residential standards prior to such transfer. Should cleanup of the site not be effected to residential standards, then notification will be given to USEPA Region IV and GEPD at least 30 days prior to any conveyance of title to the site to any third party(ies), and the purchaser(s) of the site will be advised via the deed documentation as to then existing site conditions and any/all associated institutional controls and long-term monitoring requirements.

Once the final ROD for OU 3 is signed, the ICP will be implemented into daily operations of the facility through MCLB, ALbany's Master Plan (SOUTHNAVFACENGCOM, 1993).

<IMG SRC 97063Q>

6.2.2 PSC 17, DMA Chrome Area  The purpose of the interim remedial action at PSC 17 was to remove all contaminated soil to the established cleanup concentrations specified by GEPD and USEPA in the 1992 Interim ROD.  These goals were derived to ensure that the noncancer HI for the remaining surface and subsurface soils would be equal to or less than 1 in accordance with USEPA guidance.  The cleanup goals for PSC 17 surface and subsurface soil consisted of the following (ABB-ES, 1992e):

Area "A"

| Chemicals | 0-2 feet below surface | Below 2 feet |
|---|---|---|
| Lead | < 265 mg/kg | * |
| Chromium | < 81 mg/kg | < 266 mg/kg |

Area "B"

| Chemicals | 0-2 feet below surface |
|---|---|
| PAHs | < 0.46 mg/kg |
| Aroclor-1260 | < or equal to 1 mg/kg |

Notes:  < less than
* No risks were associated with lead below the 2 foot level; therefore, no cleanup was required

The cleanup of PSC 17 consisted of the removal and transportation of contaminated soils from the site to an offbase RCRA-permitted disposal facility.  PSC 17 required excavation at two locations:  Area A and Area B (see Figure 1-3).  Soil samples were collected within the Area A and Area B excavations to confirm adequate cleanup.  Samples were sent to an offsite laboratory for analyses.

Area A.  Excavation of the entire Area A (Figure 1-3) initially proceeded to a depth of 2 feet. Confirmatory samples were then collected around the perimeter of the excavation to detect any remaining chromium or lead.  The cleanup required further excavation of Area A to a minimum depth of 5 feet.  At the eastern end of Area A, the design required excavation to a depth of 8 feet.  Samples collected below 2 feet were analyzed for total chromium only.  Samples were collected in these deeper areas to ensure that clean up levels for chromium were met.

Excavated soils from Area A were transported off-base on a daily basis to Envirite Corporation of Harvey, Illinois, an RCRA disposal facility.  Excavation continued until confirmatory analysis indicated all target cleanup concentrations were achieved.  A total of 410 tons of contaminated soil was excavated from Area A.

Area B.  Cleanup at Area B included removal of visibility stained surface soil from an area approximately 10 feet in diameter.  This area was east of the driveway, shown on Figure 1-3. These soils (Approximately 6 cubic yards) were loaded directly into a rolloff dumpster.  The initial excavation was followed by side wall confirmatory sampling and analysis of the remaining soil.  This procedure ensured that the target cleanup goals were met.

Laboratory analysis of these confirmatory soil samples indicated that target cleanup levels were met.  The soil from Area B was then tested and approved for disposal at the Pecan Row Landfill (Valdosta, Georgia).

Site Restoration. Once excavation at PSC 17 was complete, the excavated area was backfilled and compacted using confirmed clean soil from offsite sources. Samples of the fill material were collected for laboratory analyses prior to use at PSC 17 to ensure the soil was clean. Field density tests were performed on the in-place backfill to verify proper compaction. The area was then graded and seeded to restore natural conditions.

6.2.3 Final Inspection of Interim Remedial Actions On May 15, 1996, representatives from MCLB, Albany's Resident Officer In Charge of Construction and Environmental Branch, and ABB-ES conducted a construction file review and site walkover at PSC 16 and 17. The inspection revealed that all actions had been satisfactorily completed in accordance with the 1992 Interim ROD and the Contractor signed a certification statement that construction was done in accordance with the drawings and specifications. Therefore, the OU 3 remedial action was approved by the inspectors. The Remedial Action Report (ABB-ES, 1997a) was prepared summarizing the interim remedial actions implemented at OU 3.

## 7.0 EXPLANATION OF SIGNIFICANT CHANGES

As lead agency, SOUTHNAVFACENGCOM prepared and issued the Proposed Plan for OU 3 on May 5, 1997. This Proposed Plan described the rationale for a final response of institutional controls at PSC 16 and NFRAP at PSC 17. The GEPD, USEPA, and public concur with this final response. Therefore, no significant changes were made to the Proposed Plan. This response action may be reevaluated in the future if conditions at OU 3 indicate that an unacceptable risk to public health or the environment would result from exposure to the various media.

## REFERENCES


ABB Environmental Services, Inc. (ABB-ES). 1992a. Initial Evaluation of the Remedial Investigation Data for PSC 16 and PSC 17, Marine Corps Logistics Base (MCLB), Albany, Georgia. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM)(January).

ABB-ES. 1992b. Sampling and Analysis Plan for OU 3, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (March).

ABB-ES. 1992c. Final Sampling Plan for Additional Sampling at PSC 17 - Depot Maintenance Activity (DMA) Chrome Area (Operable Unit 3) on MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (April).

ABB-ES. 1992d. Proposed Plan for OU 3, Interim Remedial Action, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (July).

ABB-ES. 1992e. Remedial Investigation/Feasibility Study (RI/FS) Report for OU 3, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (July).

ABB-ES. 1993. Remedial Action for Operable Unit 3, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (August).

ABB-ES. 1997a. Remedial Action Report for Operable Unit 3, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM (March).

ABB-ES. 1997b. Proposed Plan for Operable Unit 3, Final Institutional Control, PSC 16 and No Further Remedial Action Planned, PSC 17. Prepared for SOUTHNAVFACENGCOM (May).

Applied Engineering and Science, Inc. 1989. RCRA Facility Investigation Phase One Confirmation Study. MCLB, Albany, Georgia.

BCM Engineers, Inc. 1990. Additional PCB Cleanup, Building 7100, Marine Corps Logistics Base. Prepared for the Department of the Navy, Officer in Charge of Construction, MCLB, Albany, Georgia (August).

Crawford, V.I. 1979. Environmental Engineering Survey, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM.

Envirodyne Engineers, Inc. 1985. Initial Assessment Study. MCLB, Albany, Georgia.

Marine Corps Logistics Base. 1992. Superfund Interim Record of Decision for Operable Unit 3. MCLB, Albany (August).

McClelland Engineers. 1987. Final Report, Confirmation Study Verification Step, MCLB, Albany, Georgia. Prepared for SOUTHNAVFACENGCOM.

Remtech. 1990. Proposal for Additional Work at Building Site 7100 on Contract No. N62467-89-M-3290, PCB Removal. Prepared for SOUTHNAVFACENGCOM (February).

Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM). 1974. Multiple Use Natural Resources Management Plan for Marine Corps Supply Center. Albany, Georgia.

SOUTHNAVFACENGCOM. 1993. Master Plan, MCLB, Albany, Georgia (March).

U.S. Environmental Protection Agency (USEPA). 1991a. Revised Study Plan for Sites 16 and 17, MCLB, Albany. Prepared for SOUTHNAVFACENGCOM (September).

USEPA. 1991b. Site Investigation Report for Operable Unit 3, MCLB, Albany. Albany, Georgia (December).

Westinghouse Environmental and Geotechnical Services, Inc. 1990. Hazardous Waste Analysis, 25mm Test Firing Range. Prepared for SOUTHNAVFACENGCOM (June).

## APPENDIX A

## COMMUNITY RELATIONS RESPONSIVENESS SUMMARY

### 1.0 OVERVIEW

Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACEMGCOM) held a public meeting on May 13, 1997, at Marine Corps Logistics Base (MCLB), Albany to discuss the Proposed Plan for the final institutional controls at Potential Source of Contamination (PSC) 16 and no further response action planned at PSC 17, and solicit comments and questions from the public. Two citizens attended this public meeting and expressed interest in the process and an appreciation for the work performed by SOUTHNAVFACENGCOM and MCLB, Albany. No written comments or questions were received form the public.

### 2.0 BACKGROUND OF COMMUNITY INVOLVEMENT

An active community relations program providing information and soliciting input has been conducted by MCLB, Albany for the entire National Priority List (NPL) site. Interviews of citizens onbase and in the city of Albany were conducted in the winter of 1990 to identify community concerns. Nos significant concerns that required focused response were identified. Most comments received were concerning the potential for contamination of water resources. However, those interviewed indicated that they place great trust in MCLB, Albany and their efforts two rectify past waste disposal practices. In addition, the base has formed a Technical Review Committee (TRC) that includes members representing the city of Albany, Dougherty County, and the local academic community. These TRC community members were contacted in July 1996 to determine their continued interest in serving on the committee. Each member confirmed his or her interest in serving on the TRC. In addition, parties on the MCLB, Albany Environmental Branch mailing list were contacted to solicit new community members for the TRC. Many of these individuals responded enthusiastically, and an information packet including a TRC application form was prepared and distributed on September 4, 1996. Since this solicitation, the TRC has grown form 10 to 17 members. Since September 1996, the MCLB, Albany Environmental Branch has held two meetings with the TRC to update them on the status of the investigation, remediation, and closure of the 6 PSCs. The local media have also been kept informed since MCLB, Albany was placed on the NPL. Installation Restoration program fact sheets have been prepared and made available at the Environmental Office of MCLB, Albany. Documents concerning OU 3 are located in the Information Repository at Dougherty County Public Library and the Administrative Record at the Base Environmental Branch office.

### 3.0 SUMMARY OF PUBLIC COMMENT AND AGENCY RESPONSE

#### 3.1 PUBLIC MEETING

No formal comments were received during the public meeting held on May 13, 1997. Transcripts of the public meeting are provided in Attachment 1 of this Responsiveness Summary.

#### 3.2 PUBLIC COMMENT PERIOD

The 30-day public comment period was held for the OU 3 Proposed Plan from May 5 to June 3, 1997, at MCLB, Albany. No technical comments or questions were received during the public comment period.

**ATTACHMENT A**

**PUBLIC HEARING ON OPERABLE UNIT 3**
**HELD AT MARINE CORPS LOGISTICS BASE, ALBANY, GEORGIA**
**ON TUESDAY, MAY 13, 1997 AT 7 P.M.**

Lt. Frantz: Now that we've had time to review the posters and read a little bit about it, we have Esther Hines, she lives on Bese, and Dr. Sykes who works at ASU. At least we have two this time. I've already told them we haven't ever had two.

I've got a very quick presentation. Basically, the poster session was designed so people could get familiar with Operable Unit 3 and this 30-minute is designed for discussion - discussion of OU3. So I'll go ahead and get started.

First off, I'd like to welcome everybody, both of you, and I hope the poster session was workwhile. I hope it was easy to read. I've got some comments back from Dr. Sykes. We are lucky Esther is a chemistry major so she didn't have any problem with polychlorinated byphenyls. But we do appreciate your comments Dr. Sykes - it was just a little too technical, not bad at all. We'll work on that.

Anyway, we have with us today, in the back of the room, Rob Pope, from USEPA, and Madeline Kellum, from Georgia Environmental Protection Division. They ensure that we do things right and protect the environment and restore the environment correctly. That's what their job is.

We have Joel Sanders, right here, form SOUTHDIV. His job and my job, together, we're responsible for cleaning up the site and Joel actually handles the money. He's the guy with the money to pay for the site remediation. In addition we have quite a few ABB Environmental Services members. ABB is an environmental engineering consultation firm that we have hired to do the investigations and some of the designs that determine what's best to do and what's out there. We have Joe Daniel, Jay Peters, Dave Heislein, Brent Anderson, and Bill Kollar. I think that's everybody. Okay, that's enough for that.

Obviously, the MCLB Installation Restoration Program, our purpose is to restore the sites that we can as near to natural as they were before they were contaminated by some of our past operations. The best way for us to do that in the interests of the community is to involve the community in the decision making process and also to ask for community input, comments, and discuss their concerns on the proposed plan that we have for Operable Unit 3.

The locations: Operable Unit 3 contains two separate site. The first one is in the south central portion of the base, right next to the Chow Hall, the Marine Corps Chow Hall. It used to be a site where a transformer was sitting on a concrete pad and the transformer had polychlorinated byphenyls in it and it leaked a little bit and some of that went into the soil on the site. So that's where the contamination came from for 16. And PSC 17 is the southern most portion of the Maintenance Center; and in the maintenance Center, some of the activities there in the past have been chrome plating operations and they had a chrome plating solution spill there which caused the contamination at that site.

In addition to some of the previous cleanup actions that are described in the poster session, what we are proposing to do at this time in efforts to kind of close out these site is we have some restrictions for PSC 16, we call it the final institutional controls. Those institutional controls include restrictions on the site access, restrictions on any kind of construction that happens around or on the site, and restrictions on storing anything on the site that wouldn't be good if that spilled on top of the site. Also, as part of the site workup, we put down asphalt to keep rainwater from infiltrating into the ground and we also put

a fence up around the site. So site maintenance and inspection--periodic inspections of the site to ensure that the asphalt and fencing are still in good condition.

If the base ever changes ownership, we will be required to file deed restrictions with the local planning officials so that any new owner, non-Federal owner, will know what's at the site and what he can and cannot do with that site.

And finally, it's actually under another investigation we're doing, but we will be doing some groundwater monitoring around the site to ensure that the PCB's that were left in place from about 4 feet to 10 feet - we had to leave some in place and it's explained there - but the groundwater monitoring will ensure that those PCB's do not migrate, do not move out; and if they do, we'll know about it and be able to do something about it at that time.

PSC 17, a success story. Our proposed action is no further remedial action and that's because we removed the contaminants from the site that posed the problem.

Some things to consider that are actually not on the poster boards. And some of them actually are -- I saw that. The proposed plan for Operble Unit 3 addresses surface and subsurface soils at PSC 16 and 17, because some of the numerous cleanup actions that we've done to date have already removed or isolated some of that contamination. And the groundwater at both of these sites, which have not been affected to date, will be monitored under Operable Unit 6 which is our base groundwater investigation to ensure that it doesn't migrate and if it does, or is causing a problem, that we know about and can do something about it under a groundwater investigation and remedial action.

The risks at those sites are within USEPA, US Environmental Protection Agency guidelines, and those guidelines are designed to protect human health and the environment.

Now back to the community involvement that I talked about earlier; it's important that we have community involvement and the way we try to provide for community involvement is to have meetings like this and we would like to solicit any of your comments, questions or concerns. And those can be brought up at tonight's meeting, we have comment sheets over on the table if you'd rather take it home and think about it and read about it a little bit more and send your comments in that way; that's perfectly fine. Electronic mail, Internet, the address that's up there is my Internet address and I'll be glad to field any of you comments or concerns in that media. Or you can call me at 439-5637 or Regina Hegwood, who is the civilian who works on base and she's the Public Affairs Officer. She can be reached at 439-5215. We have copies of the proposed plan up of the front desk there. You are welcome to take a look at hose. And some of the previous investigation documents that we have had prepared by ABB Environmental Services are also available at either the Dougherty County Library of Building 5501, here on base. That's where I work and we have a copy of all the investigation documents that tell how we investigated, when, and what we found. So we do--we do rely on community involvement and community acceptance of what we propose, so we would like to receive comments if you have any. All comments will be responded to in writing, so if you comment to us, we will answer in writing and tell you how we changed or what we did to incorporate your comments and questions.

With that, I think I'll just--we will be around to answer any question you may have. If you have any comments or would just like to discuss something, find out more information, we'd be glad, all of us that are here would be glad to discuss anything with you. That's it for the formal presentation. The big deal here was the poster session which provides most of the information that you might want to consider. The Operable Unit 3 proposed plan is sitting over there, we have copies available. And that contains all the information. And if you want all the background information, like I said, that's available at the public library or in my office. With that, we'll be here to answer questions or discuss.

[No questions were asked during the public hearing. Individuals spoke with both visitors before they departed.]

The foregoing is an accurate transcript of the public meeting held at Marine Corps Logistics Base, Albany, Georgia, on Tuesday, 13 May 1997, beginning at 7:10 p.m. and lasting approximately 10 minutes.

<IMG SRC 97063R>

**APPENDIX B**

**INTITUTIONAL CONTROL PLAN FOR PSC 16**
**Marine Corps Logistics Base**
**Albany, Georgia**

This attachment identifies institutional controls restricting (a) human access to and contact with subsurface soils contaminated with residual oil and polychlorinated biphenyls (PCBs) and (b) certain activities occurring on, around, or under Potential Source of Contamination (PSC) 16 of the Marine Corps Logistics Base (MCLB), Albany. A survey plat of PSC 16 (dated August 26, 1996) is attached.

Background

As a result of previous investigations, MCLB, Albany was placed in Group 7 of the National Priorities List for Uncontrolled Hazardous Waste Sites, according to Title 40, Code of Federal Regulations (CFR), Part 300 (40 CFR 300, July 1991). ABB Environmental Services, Inc. (ABB-ES), was contracted under the Comprehensive Long-Term Environmental Action, Navy (CLEAN) contract (contract number N62467-89-D-0317), to prepare Remedial Investigation and Feasibility Study (RI/FS) Workplans, Site Screening Workplans, and associated documents for 26 PSCs at MCLB, Albany. PSC 16, Building 7100 PCB Area, and PSC 17, Depot Maintenance Activities Chrome Area, comprise Operable Unit (OU) 3 at MCLB, Albany.

An RI/FSs was conducted at OU 3 from October 1991 through August 1992. An Interim Record of Decision (IROD) was signed for OU 3 in August 1992 (MCLB, Albany, 1992) requiring the construction of a multilayer cap at PSC 16. A remedial action design document was issued in August 1993 (ABB-ES, 1993) and construction of the remedy was completed in January 1994. A Remedial Action Report, which documents the construction of the interim remedial action (ABB-ES, 1997), was completed in 1997.

PSC 16. PSC 16 (Building 7100, Polychlorinated Biphenyl [PCB] Area) is the former location of an electrical transformer and supporting concrete pad. It is approximately 12 by 16 feet in size, located on the south side of Building 7100 (se attached survey). During and inspection conducted as part of a PCB transformer change-out program, evidence of leaking transformer oil was observed on the concrete pad beneath the transformer. Soil sampling and analysis conducted in 1990 confirmed the presence of PCBs and semivolatile organic compounds (SVOCs) in soil beneath the former transformer pad. Contaminated surface soil was subsequently excavated from a 12-by-16-foot area to an approximate depth of 44 inches below land surface (bls), disposed of off-base at a permitted facility, and replaced with certified clean soil. Additional soil sampling and analysis below the clean backfill identified further soil contamination of PCBs and SVOCs to a depth of approximately 10 feet bls. These remaining subsurface soils were found to contain concentrations of PCBs in the range of 13 to 310 milligrams per kilogram. Other contaminants of concern included various forms of chlorobenzenes (ABB-ES, 1992).

In accordance with the signed IROD and approved Remedial Action Design, a multilayer cap was constructed at PSC 16 between November 1993 and January 1994. Preparatory work prior to construction of the cap at PSC 16 included removal of approximately 18 inches of existing clean fill, debris, an existing fence, an electric insulator and frame with posts, and concrete footings from within the limits of work. The multilayer cap consisted of the following: two inches of asphalt at the surface supported by 12 inches of drainage sand, a 40-mil thick, very low density polyethylene liner, and 6 inches of clayey sand base material on the bottom. A chain-link fence with locking gate and warning signs was also erected to restrict unauthorized access to the area.

The payment surface will reduce the infiltration of surface water into the underlying soil, thereby directing the majority of surface water off the site. If water infiltrates the pavement, it will be collected on the VLDPE liner. The liner was sloped away from the building to drain water so as to prevent infiltration to the contaminated soils below. The liner is also attached to the adjacent building and sealed to prevent water from leaking through at the building/liner interface.
The objective of the multilayer cap was to (1) provide a barrier to prevent potential future direct human exposure to contaminate subsurface soils, and (2) eliminate the direct infiltration of surface water through the contaminated soil so as to preclude the potential for contaminant migration into groundwater. The multilayer cap was designed to create a barrier that will have long-term effectiveness and permanence in accordance with National Oil and Hazardous Substances Contingency Plan remedy selection criteria.

Land Use Restrictions (Institutional Controls)

The OU 3 IROD (MCLB, Albany, 1992) calls for the implementation of appropriate land-use restrictions on future activities within the fenced area surrounding PSC 16. The following institutional controls will restrict future construction and storage activities and limit physical access to the site while it remains under the ownership of the Federal government. Should the Navy later decide to transfer, by deed, ownership in the property encompassing PSC 16 to any private person or entity, then the provisions of paragraph Deed Covenants and Conveyance of Title as set forth on page B-3 of this Institutional Control Plan (ICP) shall apply. Until that time, the following institutional controls will remain in effect:

MCLB Security. Physical access to the property surrounding PSC 16 is controlled by base security measure, including fencing, pass and identification procedures, guardhouse, and periodic security patrols.

PSC 16 Security. Physical access to PSC 16 is controlled by fencing with a locked gate. Signs are attached to the fence identifying restricted access and points of contact through which to gain access to the site.

Authorized Activities. The following activities are permissible within the confines of PSC 16:

(1) Storage of supplies and materials that are nonhazardous and do not contain oil and/or hazardous materials and do not exceed a bearing stress of 1,350 pound per square foot (psf).

(2) Such other activities or uses that will not result in the disturbance or penetration of the constructed surface cap and thus will present no greater risk of harm to health, safety, public welfare, or the environment than the activities and uses set forth in paragraph (1) above. Such activities will not be undertaken without the express concurrence of the appropriate U.S. Environmental Protection Agency (USEPA) and Georgia Environmental Protection Division (GEPD) representatives.

Unauthorized Activities. Those activities and uses are inconsistent with the objectives of this institutional control plan, and which, if implemented at PSC 16, could pose an increased risk of harm to health, safety, public welfare, or the environment, are as follows:

(1) Penetration of the surface cap (pavement and flexible membrane liner);

(2) Installation of subsurface utilities or excavating of any type for any purpose;

(3) Construction of a belowground structure (including but not limited to foundation walls, wells for drinking water, irrigation, or other domestic purpose);

(4) Installation and/or storage of chemicals, waste chemical products, or equipment with the potential for chemical leakage;

(5) Storage of consumable goods for human or animal consumption;

(6) Motorized vehicle traffic or parking with a per tire weight exceeding 1,350 psf; and,

(7) Any improvements or storage that would cause a bearing stress on the asphalt cover of 1,350 psf or greater.

Required Maintenance. The following maintenance-related measures will be undertaken to ensure adequate protection of human health and the environment:

(1) The integrity of the surface seal will be inspected on an annual basis, and any cracks or visual defects in the surface will be repaired.

(2) The fence surrounding the site and signs restricting access will be maintained and replaced as necessary.

(3) The gate providing access to the site will be locked at all times and a set of keys maintained at the MCLB, Albany Environmental Branch Office, Building 5501.

Proposed Changes in Uses. Any proposed changes in permissible uses at PSC 16 that may result in exposure to soils beneath the flexible membrane liner material shall be evaluated by a licensed engineering professional, MCLB, Albany Environmental Branch Office, USEPA Region IV, and GEPD, who shall render an opinion as to whether or not the proposed changes will present a significant risk or harm to health, safety, public welfare, or the environment.

Deed Covenants and Conveyance of Title. Should the decision later be made to transfer ownership of the property encompassing PSC 16 to any private person or entity, then the Navy shall either (1) take all actions necessary to remediate the site to then existing residential cleanup standards prior to effecting such transfer, or (2) deed record with the Dougherty Country Register of Deeds appropriate restrictive covenants prohibiting future residential usage of the property or disturbance of the site's surface cap through routine excavation or building/utility construction, maintenance, or repair activities on or immediately adjacent to the site. Should the Navy not have the requisite legal authority to record such deed restrictions, then it shall take all steps necessary to ensure that the cognizant federal agency with such authority does so unless the property is remediated to residential standards prior to such transfer. Should cleanup of the site not be effected to residential standards, then notification will be given to USEPA Region IV and GEPD at least 30 days prior to any conveyance of title to the site to any third party(ies), and the purchaser(s) of the site will be advised via the deed documentation as to then existing site conditions and any/all associated institutional controls and long-term monitoring requirements.

Posting. This ICP will be referenced in all MCLB, Albany Utility Maps and in MCLB, Albany's Master Plan. No maintenance or construction activities are planned without referring to these maps.

**REFERENCES**

ABB Environmental Services (ABB-ES). 1992. Remedial Investigation/Feasibility Study for Operable Unit 3, Marine Corps Logistics Base (MCLB), Albany, Georgia. Prepared for Department of the Navy, Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (July).

ABB-ES. 1993. Remedial Action for Operable Unit 3, MCLB, ALbany, Georgia. Prepared for Department of the Navy, SOUTHNAVFACENGCOM, North Charleston, South Carolina (August).

ABB-ES. 1997. Remedial Action Report for Operable Unit 3, MCLB, Albany, Georgia. Prepared for Department of the Navy, SOUTHNAVFACENGCOM, North Charleston, South Carolina (March).

Marine Corps Logistics Base, Albany. 1992. Superfund Interim Record of Decision For Operable Unit 3, MCLB, Albany, Georgia. Prepared for Department of the Navy, SOUTHNAVFACENGCOM, North Charleston, South Carolina (August).

<IMG SRC 97063S>